



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/245,288

02/05/1999

AKIHIRO MURATA

101937

4735

25944

7590

08/10/2004

OLIFF & BERRIDGE, PLC

P.O. BOX 19928

ALEXANDRIA, VA 22320

EXAMINER

GRAYBILL, DAVID E

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/245,288

Applicant(s)

MURATA, AKIHIRO

Examiner

David E Graybill

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,7,9,10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) 1,3,4,6 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5-28-4 has been entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claim 7, limitation "at least one contour line formed on at least one surface of the substrate main body" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets

may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 7, 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The undescribed subject matter is the claim 7 limitation, "at least one contour line formed on at least one surface of the substrate main body." To further clarify, there is original disclosure only for an imaginary contour line – a contour line formed on a surface of the substrate is not originally disclosed.

Claims 7, 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an imaginary contour line, does not reasonably provide enablement for a contour line formed on a surface of the substrate. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 9 there is insufficient antecedent basis for the language "the side of the central area."

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Thompson (5293067).

At column 2, line 42 to column 4, line 35, Thompson discloses a semiconductor apparatus, comprising: a semiconductor device 10 having a plurality of electrodes 14; a substrate main body 16 having a first surface for mounting the semiconductor device, a second surface and a plurality of through-holes; at least one contour line (the outer circumference of agent 28) formed on at least one surface of the substrate main body, the contour line defining an area on the substrate main body; a plurality of leads 20 formed on the first surface, the plurality of leads extending from a peripheral area "perimeter" toward a central area of the substrate main body, portions of the plurality of leads extending into the area (corresponding to the area of the "gap") defined by the contour line; a plurality of conduction sections formed on the second surface, one of the conduction sections defining an external terminal 23, the conduction sections being electrically connected to the leads through the plurality of through-holes 22, internal surfaces of the through-holes are conductive and connected to respective leads; and the through-holes are arranged corresponding to the respective leads such that every lead has a through-hole 24 in an area other than the area defined by the contour line and a through-hole 22 in the area defined by the contour line; wherein the substrate main body has one through-hole 22 on the side of the central area for each of the leads, and the conduction sections are electrically connected the leads through the through-holes; wherein the

substrate main body has the plurality of through-holes for each of the leads, and the conduction sections are electrically connected to each corresponding one of the leads through a predetermined one of the through-holes.

To further clarify the disclosure of a plurality of leads, and every lead has a through-hole 24 in an area other than the area defined by the contour line and a through-hole 22 in the area defined by the contour line, although only one lead that has a through-hole 24 in an area other than the area defined by the contour line and a through-hole 22 in the area defined by the contour line is illustrated in FIG.1, the totality of the disclosure is drawn to plural such leads.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (5293067).

As cited supra, Thompson discloses all the elements of the claims.

However, Thompson does not appear to illustrate in the drawings that every lead has a through-hole 24 in an area other than the area defined by

the contour line and a through-hole 22 in the area defined by the contour line.

Nonetheless, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to duplicate the lead that has a through-hole 24 in an area other than the area defined by the contour line and a through-hole 22 in the area defined by the contour line to provide a plurality of such leads because applicant has not disclosed that, in view of the applied prior art, this limitation is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical. Furthermore, it is well established that mere repetition or duplication to accomplish an expected additive function or result is prima facie obvious absent a disclosure that the repetition or duplication is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical. See, for example, *In re Ockert*, 114 USPQ 330 (CCPA 1957); *In re Schuelke*, 96 USPQ 421 (CCPA 1953); *In re Hertrich*, 73 USPQ 442 (CCPA 1947); *Long Mfg. N.C., Inc. v. Condec Corp.*, 223 USPQ 1213 (DC ENC 1984); *St. Regis Paper Company v. Bemis Company, Inc.*, 193 USPQ 8 (CA 7 1977); *In re Harza* 124 USPQ 378 (CCPA 1960); *Hofschneider Corp. v. Lane et al., doing business as Lane and Co.*, 71 USPQ 126 (DC WNY 1946).

Claims 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson as applied to claims 7, 9 and 10 supra, and further in combination with Nara (JP05055500).

Thompson discloses all of the elements of the claims except for an explicit disclosure of at least one contour line.

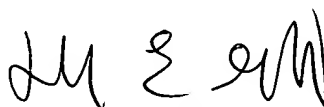
Nonetheless, in the drawings, and the English abstract and translation, Nara explicitly discloses at least one contour "lines" 5A and 5B. Moreover, it would have been obvious to combine the contour lines of Nara with the product of Thompson because, as disclosed by Nara, it would simplify design and increase manufacturing flexibility.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Head SAE Linda Hodge-Taylor whose telephone number is 571-272-1585.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.



David E. Graybill

Application/Control Number: 09/245,288

Page 9

Art Unit: 2827

Primary Examiner
Art Unit 2827

D.G.
5-Aug-04